

## EAST Search History

## EAST Search History (Prior Art)

| Ref # | Hits | Search Query  | DBs   | Default Operator | Plurals | Time Stamp          |
|-------|------|---|---|------------------|---------|---------------------|
| L27   | 118  | (porous or pore)<br>(magnet\$3 same tunnel<br>\$3) 22                                     | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | AND              | ON      | 2009/09/08<br>16:37 |
| L26   | 28   | magnet\$3 ((porous or<br>pore) same tunnel\$3)<br>22                                      | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | AND              | ON      | 2009/09/08<br>16:37 |
| L24   | 4    | (porous or pore)<br>(magnet\$3 same tunnel<br>\$3) 23                                     | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | AND              | ON      | 2009/09/08<br>16:37 |
| L23   | 19   | 18 ( (free ) same (pin<br>\$3 or fix\$3))   | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | AND              | ON      | 2009/09/08<br>16:36 |
| L22   | 1363 | 21 ( (free ) same (pin<br>\$3 or fix\$3))   | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | AND              | ON      | 2009/09/08<br>16:36 |
| L21   | 5119 | (porous or pore)<br>magnet\$3 tunnel\$3   | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | AND              | ON      | 2009/09/08<br>16:36 |
| L18   | 327  | ((nano adj (porous or<br>pore)) or nano\$por\$3<br>or nanopor\$3) magnet<br>\$3 tunnel\$3 | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | AND              | ON      | 2009/09/08<br>16:35 |

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| L16 | 13  | 15 not 12   | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | AND | OFF | 2009/09/08<br>16:34 |
| L15 | 19  | 14 ( (free ) same (pin<br>\$3 or fix\$3))   | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | AND | OFF | 2009/09/08<br>16:34 |
| L14 | 327 | ((nano adj (porous or<br>pore)) or nano\$por\$3<br>or nanopor\$3) magnet<br>\$3 tunnel\$3 | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | AND | OFF | 2009/09/08<br>16:34 |
| L13 | 6   | 9 ( (free ) same (pin\$3<br>or fix\$3))   | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | AND | OFF | 2009/09/08<br>16:32 |
| L12 | 6   | 9( (free ) same (pin\$3<br>or fix\$3))  | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | AND | OFF | 2009/09/08<br>16:32 |
| L11 | 118 | 9 (free ) and (pin\$3 or<br>fix\$3)   | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | AND | OFF | 2009/09/08<br>16:32 |
| L9  | 191 | (nano?porous or<br>nanoporous) magnet\$3<br>tunnel\$3                                     | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | AND | OFF | 2009/09/08<br>16:31 |
| L8  | 3   | nano?porous same<br>tunnel\$3   | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR  | OFF | 2009/09/08<br>16:31 |

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| L7  | 26  | nanoporous same tunnel\$3   | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR  | OFF | 2009/09/08<br>16:28 |
| L6  | 284 | nanoporous and tunnel \$3   | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR  | OFF | 2009/09/08<br>16:28 |
| S44 | 1   | S43 spacer "113" "133"  | US-PGPUB;<br>USPAT; USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB          | AND | ON  | 2009/03/25<br>19:50 |
| S43 | 1   | (US-20060216836-\$).<br>did.  | US-PGPUB  | AND | ON  | 2009/03/25<br>19:49 |
| S42 | 1   | S38 S36   | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | AND | ON  | 2009/03/25<br>18:39 |
| S41 | 76  | (nanoparticle nano?<br>particle (nano adj<br>particle) nanowire<br>nano?wire (nano adj<br>wire) nanotubes nano?<br>tube (nano adj tube))<br>and S37 | US-PGPUB;<br>USPAT; USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB          | OR  | ON  | 2009/03/25<br>18:39 |
| S40 | 0   | (nanoparticle nano?<br>particle (nano adj<br>particle) nanowire<br>nano?wire (nano adj<br>wire) nanotubes nano?<br>tube (nano adj tube))<br>and S37 | US-PGPUB;<br>USPAT; USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB          | AND | ON  | 2009/03/25<br>18:39 |
| S39 | 249 | ((BRUNETTO) near2<br>(MARTORANA)).INV.<br>((DANIELE) near2<br>(PULLINI)).INV.<br>((PIERO) near2<br>(PERLO)).INV.                                    | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR  | ON  | 2009/03/25<br>18:39 |
| S38 | 16  | ("5463516" "5773156"<br>"2002043974"<br>"2002190713"<br>"2001028872"<br>"6353317" "6103406"<br>"2002114974").pn.                                    | US-PGPUB;<br>USPAT; USOCR;<br>DERWENT                                   | OR  | ON  | 2009/03/25<br>18:39 |

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| S37 | 3717 | S35 S36  | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | AND | ON | 2009/03/25<br>18:39 |
| S36 | 6822 | (free and (pinned or<br>pinning or fixed or<br>fixing)) adj layer  | US-PGPUB;<br>USPAT; USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB          | OR  | ON | 2009/03/25<br>18:39 |
| S35 | 8317 | spin?valve or (spin adj<br>valve)  | US-PGPUB;<br>USPAT; USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB          | OR  | ON | 2009/03/25<br>18:39 |
| S34 | 3717 | S32 S33  | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | AND | ON | 2009/03/25<br>18:39 |
| S33 | 6822 | (free and (pinned or<br>pinning or fixed or<br>fixing)) adj layer  | US-PGPUB;<br>USPAT; USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB          | OR  | ON | 2009/03/25<br>18:39 |
| S32 | 8317 | spin?valve or (spin adj<br>valve)  | US-PGPUB;<br>USPAT; USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB          | OR  | ON | 2009/03/25<br>18:39 |
| S31 | 16   | "5463516" "5773156"<br>"2002043974"<br>"2002190713"<br>"2001028872"<br>"6353317" "6103406"<br>"2002114974").pn.  | US-PGPUB;<br>USPAT; USOCR;<br>DERWENT                                   | OR  | ON | 2009/03/25<br>18:39 |
| S30 | 249  | ((BRUNETTO) near2<br>(MARTORANA)).INV.<br>((DANIELE) near2<br>(PULLINI)).INV.<br>((PIERO) near2<br>(PERLO)).INV. | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR  | ON | 2009/03/25<br>18:39 |
| S29 | 2    | "US 20060216836"   | US-PGPUB;<br>USPAT; USOCR;<br>DERWENT                                   | AND | ON | 2009/03/25<br>18:39 |

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|-----|---------|---|--|----|----|---------------------|
| S28 | 8603    | (257/002 257/421<br>257/422 257/423<br>257/424 257/425<br>257/426 257/427<br>360/324.2 438/900<br>438/3 365/158<br>257/003 257/004<br>257/005).ccls. (257/30<br>360/324.1 365/158).<br>CCLS.  | US-PGPUB;<br>USPAT; USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2009/03/25<br>18:39 |
| S27 | 6034    | (257/002 257/421<br>257/422 257/423<br>257/424 257/425<br>257/426 257/427<br>360/324.2 438/900<br>365/158 257/003<br>257/004 257/005).ccls.<br>(257/30 360/324.1<br>365/158).CCLS.  | US-PGPUB;<br>USPAT; USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2009/03/25<br>18:39 |
| S26 | 2343469 | ferromagnet\$3 or ferro<br>\$magnet\$3 or magnet<br>\$3   | US-PGPUB;<br>USPAT; USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2009/03/25<br>18:39 |
| S25 | 13165   | antiferromagnet\$3 or<br>antiferro\$magnet\$3 or<br>anti\$ferromagnet\$3 or<br>(anti adj ferro\$magnet<br>\$3)  | US-PGPUB;<br>USPAT; USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2009/03/25<br>18:39 |
| S24 | 38      | (US-20060102969-\$ or<br>US-20060128038-\$ or<br>US-20060180839-\$ or<br>US-20030179071-\$ or<br>US-20060003185-\$ or<br>US-20060012926-\$ or<br>US-20060093862-\$ or<br>US-20060098354-\$ or<br>US-20060221510-\$ or<br>US-20060255383-\$).<br>did. (US-20040041183-<br>\$ or US-20060255383-<br>\$ or US-20060098354-<br>\$ or US-20060093862-<br>\$ or US-20060012926-<br>\$ or US-20060102969-<br>\$ or US-20060221510-<br>\$ or US-20060128038-<br>\$ or US-20060003185-<br>\$ or US-20030179071-<br>\$ or US-20060180839-<br>\$ or US-20040136232-<br>\$).did. or (US-6097625-<br>\$ or US-6841395-\$ or<br>US-684(US-5565695-\$<br>or US-5432373-\$ or US- | US-PGPUB;<br>USPAT; USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2009/03/25<br>18:39 |

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|-----|----|--|---|-----|----|---------------------|
|     |    | 6297987-\$ or US-5515314-\$ or US-5652445-\$)".<br>did.5038-\$).did.   |   |     |    |                     |
| S23 | 24 | (US-20060102969-\$ or US-20060128038-\$ or US-20060180839-\$ or US-20030179071-\$ or US-20060003185-\$ or US-20060012926-\$ or US-20060093862-\$ or US-20060098354-\$ or US-20060221510-\$ or US-20060255383-\$).<br>did. (US-20040041183-\$ or US-20060255383-\$ or US-20060098354-\$ or US-20060093862-\$ or US-20060012926-\$ or US-20060102969-\$ or US-20060221510-\$ or US-20060128038-\$ or US-20060003185-\$ or US-20030179071-\$ or US-20060180839-\$ or US-20040136232-\$).did. or (US-6097625-\$ or US-6841395-\$ or US-684(US-5565695-\$ or US-5432373-\$ or US-6297987-\$ or US-5515314-\$ or US-5652445-\$)".<br>did.5038-\$).did. | US-PGPUB;<br>USPAT; USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB          | AND | ON | 2009/03/25<br>18:39 |
| S22 | 1  | S18 S16  | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | AND | ON | 2008/08/26<br>17:01 |
| S21 | 64 | (nanoparticle nano? particle (nano adj particle) nanowire nano?wire (nano adj wire) nanotubes nano? tube (nano adj tube)) and S17  | US-PGPUB;<br>USPAT; USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB          | OR  | ON | 2008/08/26<br>13:50 |
| S20 | 0  | (nanoparticle nano? particle (nano adj particle) nanowire nano?wire (nano adj wire) nanotubes nano? tube (nano adj tube)) and S17  | US-PGPUB;<br>USPAT; USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB          | AND | ON | 2008/08/26<br>13:50 |

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|-----|------|--|---|-----|----|---------------------|
| S19 | 241  | ((BRUNETTO) near2 (MARTORANA)).INV.<br>((DANIELE) near2 (PULLINI)).INV.<br>((PIERO) near2 (PERLO)).INV.          | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR  | ON | 2008/08/26<br>13:48 |
| S18 | 16   | ("5463516" "5773156"<br>"2002043974"<br>"2002190713"<br>"2001028872"<br>"6353317" "6103406"<br>"2002114974").pn. | US-PGPUB;<br>USPAT; USOCR;<br>DERWENT                                   | OR  | ON | 2008/08/26<br>13:48 |
| S17 | 3458 | S15 S16  | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | AND | ON | 2008/08/26<br>13:48 |
| S16 | 6216 | (free and (pinned or pinning or fixed or fixing)) adj layer  | US-PGPUB;<br>USPAT; USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB          | OR  | ON | 2008/08/26<br>13:48 |
| S15 | 7923 | spin?valve or (spin adj valve)   | US-PGPUB;<br>USPAT; USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB          | OR  | ON | 2008/08/26<br>13:48 |
| S14 | 3456 | S12 S13  | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | AND | ON | 2008/08/25<br>16:12 |
| S13 | 6212 | (free and (pinned or pinning or fixed or fixing)) adj layer  | US-PGPUB;<br>USPAT; USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB          | OR  | ON | 2008/08/25<br>16:11 |
| S12 | 7921 | spin?valve or (spin adj valve)   | US-PGPUB;<br>USPAT; USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB          | OR  | ON | 2008/08/25<br>16:11 |
| S11 | 16   | ("5463516" "5773156"<br>"2002043974"<br>"2002190713"<br>"2001028872"<br>"6353317" "6103406"<br>"2002114974").pn. | US-PGPUB;<br>USPAT; USOCR;<br>DERWENT                                   | OR  | ON | 2008/08/25<br>16:07 |

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|-----|---------|--|---|-----|----|---------------------|
| S10 | 241     | ((BRUNETTO) near2 (MARTORANA)).INV.<br>((DANIELE) near2 (PULLINI)).INV.<br>((PIERO) near2 (PERLO)).INV.  | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR  | ON | 2008/08/25<br>14:52 |
| S9  | 2       | "US 20060216836"   | US-PGPUB;<br>USPAT; USOCR;<br>DERWENT                                   | AND | ON | 2008/08/25<br>14:51 |
| S8  | 8120    | (257/002 257/421<br>257/422 257/423<br>257/424 257/425<br>257/426 257/427<br>360/324.2 438/900<br>438/3 365/158<br>257/003 257/004<br>257/005).ccls. (257/30<br>360/324.1 365/158).<br>CCLS.   | US-PGPUB;<br>USPAT; USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB          | OR  | ON | 2008/08/25<br>14:51 |
| S6  | 5542    | (257/002 257/421<br>257/422 257/423<br>257/424 257/425<br>257/426 257/427<br>360/324.2 438/900<br>365/158 257/003<br>257/004 257/005).ccls.<br>(257/30 360/324.1<br>365/158).CCLS.   | US-PGPUB;<br>USPAT; USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB          | OR  | ON | 2008/05/23<br>13:31 |
| S4  | 2153752 | ferromagnet\$3 or ferro<br>\$magnet\$3 or magnet<br>\$3  | US-PGPUB;<br>USPAT; USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB          | OR  | ON | 2008/02/04<br>11:10 |
| S3  | 11343   | antiferromagnet\$3 or<br>antiferro\$magnet\$3 or<br>anti\$ferromagnet\$3 or<br>(anti adj ferro\$magnet<br>\$3)   | US-PGPUB;<br>USPAT; USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB          | OR  | ON | 2008/02/04<br>11:10 |
| S2  | 38      | (US-20060102969-\$ or<br>US-20060128038-\$ or<br>US-20060180839-\$ or<br>US-20030179071-\$ or<br>US-20060003185-\$ or<br>US-20060012926-\$ or<br>US-20060093862-\$ or<br>US-20060098354-\$ or<br>US-20060221510-\$ or<br>US-20060255383-\$).<br>did. (US-20040041183-<br>\$ or US-20060255383-<br>\$ or US-20060098354-<br>\$ or US-20060093862-<br>\$ or US-20060012926-<br>\$ or US-20060102969- | US-PGPUB;<br>USPAT; USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB          | OR  | ON | 2008/02/04<br>11:10 |



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|----|----|--|--|-----|----|---------------------|
|    |    | \$ or US-20060221510-<br>\$ or US-20060128038-<br>\$ or US-20060003185-<br>\$ or US-20030179071-<br>\$ or US-20060180839-<br>\$ or US-20040136232-<br>\$).did. or (US-6097625-<br>\$ or US-6841395-\$ or<br>US-684(US-5565695-\$<br>or US-5432373-\$ or US-<br>6297987-\$ or US-<br>5515314-\$ or US-<br>5652445-\$)".<br>did.5038-"\$).did.   |  |     |    |                     |
| S1 | 24 | (US-20060102969-\$ or<br>US-20060128038-\$ or<br>US-20060180839-\$ or<br>US-20030179071-\$ or<br>US-20060003185-\$ or<br>US-20060012926-\$ or<br>US-20060093862-\$ or<br>US-20060098354-\$ or<br>US-20060221510-\$ or<br>US-20060255383-\$).<br>did. (US-20040041183-<br>\$ or US-20060255383-<br>\$ or US-20060098354-<br>\$ or US-20060093862-<br>\$ or US-20060012926-<br>\$ or US-20060102969-<br>\$ or US-20060221510-<br>\$ or US-20060128038-<br>\$ or US-20060003185-<br>\$ or US-20030179071-<br>\$ or US-20060180839-<br>\$ or US-20040136232-<br>\$).did. or (US-6097625-<br>\$ or US-6841395-\$ or<br>US-684(US-5565695-\$<br>or US-5432373-\$ or US-<br>6297987-\$ or US-<br>5515314-\$ or US-<br>5652445-\$)".<br>did.5038-"\$).did. | US-PGPUB;<br>USPAT; USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | AND | ON | 2008/02/04<br>11:10 |

9/ 8/ 2009 4:46:46 PM

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